

REMARKS

Applicants appreciate the Examiner's thorough consideration provided in the present application. Claims 1-4, 7-13, 15, 16 and 19-22 are currently pending in the instant application. Claims 1, 8 and 13 have been amended. Claims 1, 8 and 13 are independent. Reconsideration of the present application is earnestly solicited.

The Examiner is requested to contact the undersigned via telephone in the Washington, DC area if any issues require clarification after review of the aforementioned Amendments and following remarks.

Reasons for Entry of Amendment

As discussed in greater detail hereinafter, Applicants respectfully submit that the rejections under 35 U.S.C. § 103(a) are improper and should be withdrawn. Specifically, Applicants submit that the Examiner has misinterpreted the references of the prior art of record relied upon by the Examiner in the rejection of the claims. Accordingly, the finality of the Final Office Action mailed on January 21, 2004 should be withdrawn.

If the Examiner persists in maintaining his rejections, Applicants respectfully request entry and consideration of the foregoing amendments as

they remove issues for appeal and place the current application in a condition for allowance.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-4, 7-13, 15, 16 and 19-22 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ishihara (U.S. Patent No. 4,567,958) in view of Ishikawa (U.S. Patent No. 4,793,301), and further in view of Bacher (U.S. Patent No. 4,178,808), and further in view of Siblik (U.S. Patent No. 5,584,410). This rejection is respectfully traversed.

Applicants submit that the prior art of record fails to teach or suggest each and every limitation of the unique combination of limitations of the claimed invention of claims 1, 8 and 13. Further, the Examiner has misinterpreted the Ishihara reference and/or interpreted the term swingably supported around the crankshaft in a manner that is repugnant to any reasonable interpretation of this limitation. However, in order to expedite the prosecution of the present application, Applicants have further clarified this limitation in claims 1, 8 and 13 for the benefit of the Examiner. However, Applicants submit that these non-narrowing amendments have not been made responsive to a proper statutory rejection and merely emphasize implicitly claimed limitations already present in the original claims. Accordingly, this

rejection should be withdrawn and the present application should be passed to Issue.

With respect to claim 1, the unique combination of elements of the claimed invention is not taught or suggested by the prior art of record. For example, prior art of record does not teach or suggest “a crankshaft having a drive end, wherein the crankshaft includes a plurality of molded crank pins formed integrally with the crankshaft; *a transmission case, wherein said transmission case is swingably supported around and with respect to the crankshaft*; a V-belt arranged between a fixed pulley half fixed to an end portion of the crankshaft and an axially movable pulley half supported on the crankshaft in a position laterally opposite to the fixed pulley half; and a bolt securing said fixed pulley half to the end portion of the crankshaft, said bolt threadingly engaged with a female screw portion formed within an interior portion of the end portion of the crankshaft, wherein an open edge of the end portion of the crankshaft with the female screw portion formed has a chamfered, tapered edge.” (emphasis added) Accordingly, this rejection should be withdrawn.

With respect to claim 8, the unique combination of elements of the claimed invention is not taught or suggested by the prior art of record. For example, the prior art of record does not teach or suggest “a V-belt

transmission comprising a crankshaft having a drive end, wherein the crankshaft includes a plurality of molded crank pins formed integrally with the crankshaft; *a transmission case, wherein said transmission case is swingably supported around and with respect to the crankshaft*; a rear wheel drive section; a driving pulley operatively connected to said crankshaft; and a driven pulley operatively connected to the rear wheel drive section of said transmission; a V-belt arranged between said driving pulley and said driven pulley, wherein said driving pulley includes a fixed pulley half fixed to an end portion of the crankshaft and an axially movable pulley half supported on the crankshaft in a position laterally opposite to the fixed pulley half; and a bolt securing said fixed pulley half to the end portion of the crankshaft, said bolt threadingly engaged with a bolt hole formed within an interior portion of the end portion of the crankshaft, wherein an open edge of the end portion of the crankshaft has a chamfered, tapered edge.” (emphasis added) Accordingly, this rejection should be withdrawn.

With respect to claim 13, the prior art of record fails to teach or suggest the unique combination of elements of the claimed invention, including the limitation(s) of “A V-belt transmission comprising a crankshaft having a drive end, wherein the crankshaft includes a plurality of molded crank pins formed integrally with the crankshaft; *a transmission case, wherein said transmission*

case is swingably supported around and with respect to the crankshaft; a rear wheel drive section; a driving pulley operatively connected to said crankshaft; and a driven pulley operatively connected to the rear wheel drive section of said transmission; a V-belt arranged between said driving pulley and said driven pulley, wherein said driving pulley includes a fixed pulley half fixed to an end portion of the crankshaft and an axially movable pulley half supported on the crankshaft in a position laterally opposite to the fixed pulley half; and a bolt securing said fixed pulley half to the end portion of the crankshaft, said bolt threadingly engaged with a bolt hole formed within an interior portion of the end portion of the crankshaft, wherein the bolt hole is formed in an end face of a left shaft portion of the crankshaft, the bolt hole having a depth of about half of a length of the left shaft portion; and a left unthreaded portion, a central female thread portion, and a right unthreaded portion, wherein an open edge of an end portion of the crankshaft with the female thread portion has a chamfered, tapered edge.” (emphasis added) Accordingly, these rejections should be withdrawn.

The Examiner has indicated that as “broadly claimed, the transmission case of Ishihara, which is rotatably supported relative to the crankshaft, is swingably supported around the crankshaft. Figure 4 of the Ishihara clearly discloses a transmission unit 34 enclosed by a transmission case 50 connected

to said crankshaft 56 via a bearing (not referenced). The limitation that the transmission case is swingably supported around the crankshaft is not narrowly construed to limit the transmission case to be not fixed to the engine block.” (See Final Office Action page 3, paragraph 3). The Examiner’s position is respectfully traversed as being unreasonable and/or improper.

First, Applicants submit that it is clear in the present application that the term swingably supported around the crankshaft clearly means that the transmission case is swingable with respect to the crankshaft and the engine. Therefore, one of ordinary skill in the art would clearly not interpret the rotatable crankshaft of Ishihara as being *swingable* with respect to the transmission. In Ishihara, the transmission is rigidly secured to the engine block and clearly cannot swing with respect to the crankshaft.

If the Examiner had any doubt as to the common understanding of the term swingable, e.g., see swing arm frames or suspensions in the related motorcycle art, Applicants have already properly and clearly defined the term swingable in their own application. At paragraph 0060 of the present application, Applicants have clearly indicated that “the right and left transmission cases 51, 52 which support the V-belt type transmission 70 are supported so that the left fork member 52c, the right fork member 53 and the rear wheel 15 are *swingable (e.g., can pivot relative to the crankshaft in an*

upward and downward direction relative to the vehicle frame) vertically around the crankshaft 25."

The Examiner's statement that the "limitation that the transmission case is *swingably supported around the crankshaft* is not narrowly construed to limit the transmission case to be not fixed to the engine block" is unreasonable. Applicants submit that this is not an issue of narrow or broad interpretations. Ishihara simply does not teach a swingably supported transmission case. In Ishihara, the transmission unit is clearly fixed so as NOT to be swingable with respect to the engine block. Ishihara teaches in lines 39-41 of col. 3 that the body portion 52 of the case is fixed rigidly to the engine 32, e.g., and may even include a common casting with the engine 32. Therefore, Applicants fail to see how the fixed, e.g., it cannot move, transmission of Ishihara can reasonably be interpreted to be swingable with respect to a crankshaft. In Ishihara, the crankshaft is rotatable, and the transmission does not move relative to the crankshaft. Therefore, the Examiner's interpretation of Ishihara's rigid transmission case to somehow be broadly "swingable around the crankshaft" is without merit. Further, one of ordinary skill in the art would clearly not interpret the Ishihara reference to include this feature, as a rigidly fixed transmission case cannot be swingable with respect to a crankshaft. In light of the ordinary accepted meaning of the term swingable, Applicants' comments in

the Remarks before the Patent Office, and the original written description which clearly provides a definition of the term swingable, the Examiner's rejection is improper and should be withdrawn.

In order to clarify the claimed invention for the benefit of the Examiner, Applicants have amended the term swingable around the crankshaft to swingable around and with respect to the crankshaft to clearly indicate that the transmission case is clearly swingable with respect to the crankshaft, e.g., it can move or pivot with respect to the crankshaft.

As better understood and described by paragraphs 0055-0060 (and FIGs. 3 and 4) of the claimed invention, the unique structure of the claimed invention provides several benefits over the transmission structure of the background art. Specifically, when a vehicle travels over a gap or irregular surface on the ground, the drive pulley would absorb torque and vibration being transmitted by the oscillation of the transmission case. Accordingly, the total torque variation, e.g., at the drive pulley and crankshaft, becomes excessively large.

However, in the claimed invention, the contact pressure between a bolt affixing the drive pulley to a crankshaft is normalized because the radius of the bolt is smaller than that of a nut (as used in the background art) in the claimed invention. Additionally, the length of the contact portion of the bolt is longer than that of the nut. Accordingly, the pulley is securely affixed onto the

crankshaft by a bolt in a manner that is not affected by large variations in torque typically transmitted through the transmission case, crankshaft, drive pulley of a transmission of the background art.

Applicants submit that one of ordinary skill in the art would not have looked to the alleged teachings of Ishihara, modified this transmission to include a two cylinder engine having a crankshaft with a plurality of crank pins and a crank weight. Applicants appreciate that it is possible to alter the Ishihara transmission to include a two cylinder engine with a crankshaft and a plurality of crank pins and crank weight. However, Applicants submit that it is unclear why one of ordinary skill in the art, without having relied upon the teachings of Applicants own disclosure, would want to modify the Ishihara reference to achieve these features. Specifically, the Examiner has not identified some art recognized problem as support for the alleged motivation to transform the transmission of Ishihara into one that includes a portion of the structure of the Ishikawa engine.

Further, Applicants submit that one of ordinary skill in the art would not continue to alter this alleged combination of Ishihara in view of Ishikawa to include individual features of the Bacher reference and then the Siblik reference. Applicants submit that it appears that the Examiner has merely shown that it would have been *possible* to reconstruct Applicants claimed

invention with the technology available in the prior art. However, Applicants submit that this is not a proper test for obviousness. Applicants do not dispute that many of the individual features of Applicants claimed invention have been individually described in the prior art of record. However, the combination of these features, for the purpose of addressing problems heretofore only identified by Applicants, has not been shown in the prior art of record. Instead, one of ordinary skill in the art, without relying upon Applicants own teachings, must be shown to have thought it obvious to alter Ishihara, Ishikawa, Bacher and finally Siblik as advanced by the Examiner. Applicants submit that the alleged combination of the prior art of record would not have been obvious to one of ordinary skill in the art without relying upon the benefit of Applicants own disclosure. Accordingly, this rejection is improper and should be withdrawn.

In accordance with the above discussion of the patents relied upon by the Examiner, Applicants respectfully submit that these documents, either in combination together or standing alone, fail to teach or suggest the invention as is set forth by the claims of the instant application.

As to the dependent claims, Applicants respectfully submit that these claims are allowable due to their dependence upon an allowable independent claim, as well as for additional limitations provided by these claims.

CONCLUSION

Since the remaining references cited by the Examiner have not been utilized to reject the claims, but merely to show the state-of- the-art, no further comments are deemed necessary with respect thereto.

All the stated grounds of rejection have been properly traversed and/or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently pending rejections and that they be withdrawn.

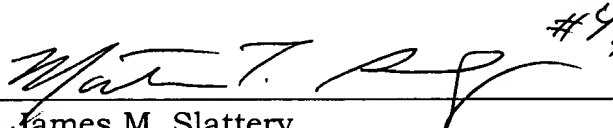
It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

In the event there are any matters remaining in this application, the Examiner is invited to contact Matthew T. Shanley, Registration No. 47,074 at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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